

1. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-6}{2} - \frac{6}{6}x \geq \frac{9}{5}x + \frac{3}{4}$$

- A. $[a, \infty)$, where $a \in [0, 3.75]$
 - B. $[a, \infty)$, where $a \in [-2.25, 0]$
 - C. $(-\infty, a]$, where $a \in [-3, 0.75]$
 - D. $(-\infty, a]$, where $a \in [0.75, 3]$
 - E. None of the above.
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2. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-3x - 7 \leq 5x + 3$$

- A. $(-\infty, a]$, where $a \in [-2.5, -1]$
 - B. $(-\infty, a]$, where $a \in [0.8, 1.5]$
 - C. $[a, \infty)$, where $a \in [-4.25, -0.25]$
 - D. $[a, \infty)$, where $a \in [1.25, 10.25]$
 - E. None of the above.
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3. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

No less than 8 units from the number 5.

- A. $(-\infty, 3) \cup (13, \infty)$
- B. $(3, 13)$
- C. $(-\infty, 3] \cup [13, \infty)$
- D. $[3, 13]$

E. None of the above

4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 - 8x < \frac{-23x + 6}{4} \leq 3 - 7x$$

- A. $[a, b)$, where $a \in [-2.25, 6.75]$ and $b \in [-3.75, 0.75]$
B. $(-\infty, a] \cup (b, \infty)$, where $a \in [0.75, 5.25]$ and $b \in [-1.72, 0.9]$
C. $(-\infty, a) \cup [b, \infty)$, where $a \in [0.75, 4.5]$ and $b \in [-6, 0.75]$
D. $(a, b]$, where $a \in [-0.75, 4.5]$ and $b \in [-1.95, -0.67]$
E. None of the above.
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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-5}{2} - \frac{7}{6}x \geq \frac{-5}{3}x - \frac{8}{7}$$

- A. $(-\infty, a]$, where $a \in [-6, 2.25]$
B. $[a, \infty)$, where $a \in [1.5, 3]$
C. $(-\infty, a]$, where $a \in [1.5, 3.75]$
D. $[a, \infty)$, where $a \in [-8.25, 2.25]$
E. None of the above.
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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 + 8x > 11x \text{ or } 4 + 7x < 8x$$

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.75, 0.75]$ and $b \in [3, 6]$
B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7.5, -3.75]$ and $b \in [-2.25, 3]$

- C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-5.77, -2.7]$ and $b \in [2.17, 3.67]$
D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-3.52, -1.43]$ and $b \in [3.6, 4.42]$
E. $(-\infty, \infty)$
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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-6 + 8x < \frac{61x + 6}{7} \leq -8 + 6x$$

- A. $(-\infty, a] \cup (b, \infty)$, where $a \in [8.25, 13.5]$ and $b \in [1.5, 5.25]$
B. $(a, b]$, where $a \in [9, 12]$ and $b \in [2.25, 6.75]$
C. $(-\infty, a) \cup [b, \infty)$, where $a \in [6.75, 10.5]$ and $b \in [0.75, 5.25]$
D. $[a, b)$, where $a \in [8.25, 12]$ and $b \in [0.75, 5.25]$
E. None of the above.
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8. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

Less than 2 units from the number -5 .

- A. $(-\infty, -7] \cup [-3, \infty)$
B. $[-7, -3]$
C. $(-\infty, -7) \cup (-3, \infty)$
D. $(-7, -3)$
E. None of the above
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9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-9 + 9x > 11x \text{ or } 9 + 7x < 8x$$

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-6, -1.5]$ and $b \in [5.25, 12]$
 - B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-6.75, -3.75]$ and $b \in [5.25, 12]$
 - C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-12, -7.5]$ and $b \in [0, 7.5]$
 - D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-13.5, -6.75]$ and $b \in [0, 6]$
 - E. $(-\infty, \infty)$
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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$4x - 9 \leq 7x - 5$$

- A. $(-\infty, a]$, where $a \in [-0.67, 6.33]$
 - B. $(-\infty, a]$, where $a \in [-7.33, 0.67]$
 - C. $[a, \infty)$, where $a \in [-1.7, 1]$
 - D. $[a, \infty)$, where $a \in [0, 4.5]$
 - E. None of the above.
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